



Geographic Coordinate Data Base

GCDB Coverage Format Description Document

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Bureau of Land Management
Land & Resources Project Office
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1.0 Introduction

The GCDB Coverage Format is the BLM standard for GCDB Geographic Information System (GIS) coverages. The format was developed by technical users representing the BLM Cadastral Program. GIS specialists are encouraged to utilize the GCDB Coverage Format, whenever feasible, in the creation of GIS products that are based on GCDB data. The GCDB coverages are created using ArcInfo technology. However, other software tools are equipped to read and view the coverages.

The GCDB Data Prep software adheres to the GCDB Coverage Format, so GCDB flat files converted to coverages using Data Prep will automatically match the BLM standard.

Coverages built by GCDB Data Prep v1.04-11162001 are in compliance with the November 2001 GCDB Coverage Format, described herein.

The source data used in these coverages are the official survey records and corresponding geodetic control information. Spatial features including surveyed lines and control points become records in the coverage tables. Unique identifiers, maintained by ArcInfo, provide the link between the spatial information that locates the feature and the attribute information that describes the feature. This document describes the coverage tables and attributes.

The GCDB Coverage Format Description Document has three (3) sections.

- Section 1 Introduction describes the document.
- Section 2 GCDB Township Coverages defines the tabular structures for the ArcInfo coverages.
- Section 3 Translation to the Cadastral Data Transfer Profile provides a cross-walk between the attribute items making up the Cadastral Data Content Standard and the items created by the GCDB Data Prep processes.

2.0 GCDB Data Sets

GCDB Data Prep software creates ArcInfo coverages from input text files containing survey information. The software validates the input data and creates the following coverages:

Coverage Name	Spatial Features	ArcInfo Feature Class
CTRL	Control Points	Points
LABELS_GCDB	Area Points, Survey Lines	Points, Arcs, Nodes
GCDB	Areas, Survey Lines	Polygons, Regions, Arcs, Nodes
REL_LINES_UTM	Survey lines	Arcs
REL AREAS_UTM	Areas	Polygons

Township coverages are stored in sub-directories under the \$GCDB_COVERAGES directory. The township directory name is constructed from the 2 letter state code, 2 digit principal meridian code, and tier/range codes (for example: nm23t0320n0050w for Township 32N Range 5W of the NM Principal Meridian). Projection files are included with each coverage to define the spatial reference system of the coordinates.

2.0.1 CTRL - Control Points Coverage

The CTRL coverage is created from GCDB input files (e.g., *township.CON*) stored under the \$GCDB_CONV_IN township directory. The CTRL coverage is a point coverage that contains control locations for the specified township. Control point features are described by elements such as a point identifier, elevation, and reliability measurements. The control points are provided in a separate coverage for easy identification.

2.0.2 LABELS_GCDB - Label Points Coverage

The LABELS_GCDB coverage is created from GCDB input files containing point and line information (e.g., *township.AN* (point), *township.LX* (lines)) stored under the \$GCDB_CONV_IN township directory. Each record in the GCDB input label (point) file is represented as a discrete point feature in the LABELS_GCDB coverage. Each record in the input survey line files, excluding duplicate lines (i.e., lines with the same end points) is represented by a discrete line feature in the LABELS_GCDB coverage. The LABELS_GCDB coverage contains points that are labeled with the land descriptions that describe the particular Land Description Area (LADESC). The LABELS_GCDB coverage provides the basis for the GCDB coverage polygon and region topology.

2.0.3 GCDB Coverage

The GCDB coverages contains polygons constructed from the GCDB coordinates . Polygon labels are derived from the labels_gcdb coverages and individual polygons are aggregated to form **Township, Section and Land Description Area** region features.

Feature Class	Description
Arcs	Survey lines used to construct polygons. Attributes include line type and symbology.
Nodes	Survey point information linked to the end points of the arcs. Attributes include Point ID, reliability, Elevation, and collection software (PCCS, GMM).
Polygons	Area features constructed from survey lines. Attributes include State, Principle Meridian, Tier, Range, Survey Type/Number/Suffix/Note, and (record) Acreage.
Township region	Polygons aggregated into a single feature representing the township boundary. Attributes include State, Principle Meridian, Tier, and Range.
Section region	Polygons aggregated into section features. Attributes include State, Principle Meridian, Tier, Range and Section number.
Land Description Area region	Overlapping features representing each survey are constructed to support multiple labels in a single Land Description Area. Attributes include State, Principle Meridian, Tier, Range, Survey Type/Number/Suffix/Note and record acreage.

2.0.4 Reliability Lines Coverage - REL_LINES_UTM

The Reliability Lines coverage contains constant-width lines derived from the GCDB input files. Surveyed lines, defined by data from the township.RAW file, are depicted as solid lines. Computed lines, defined by data from the township.LX file, are depicted as dashed lines. The lines in the Reliability Lines coverage are classified according to the Highest Reliability Value (HI_REL_VALUE) of the endpoints of each line. It is determined by finding the highest numeric value of the endpoints of the line. For GMM data both the Error Ellipse North and Error Ellipse East are searched. For PCCS, only the Average Reliability of the endpoints are included in the search. Each area is classified using the following key.

<u>Highest Reliability Value in Feet</u>	<u>Color</u>
0	Black or White*
1 - 3	Blue
4 - 40	Purple
41 - 200	Green
Over 200	Red

* These lines are black if the background is white. They automatically change to white if the background is black.

2.0.5 Reliability Areas Coverage - REL AREAS UTM

The Reliability Areas coverage shows the areas of uncertainty of surveyed lines (in feet). The areas are derived by creating trapezoids around each surveyed line that is recorded in the township.RAW file. The trapezoid is constructed by computing orthogonal offsets at each endpoint, based on the Highest Reliability Value of that point. Then the offsets are connected to construct the areas of uncertainty.

The width of the Reliability Area is twice the Highest Reliability Value (Error Ellipse North, Error Ellipse East, or Average Reliability) of the endpoint of the line. This is because the actual position of the coordinate may be up to the given (reliability) distance away from the adjusted location of the point in either direction, perpendicular to the line.

Reliabilities of zero may indicate a fixed (transferred) boundary or lines with endpoints of fixed horizontal control. GCDB lines that have a reliability of zero at one or both endpoints are not drawn as Reliability Areas. The user is warned about lines with reliability values of zero if the Reliability Areas coverage is viewed using the ArcInfo Interface.

The Reliability Areas layer is depicted using the ArcInfo Interface according to a color key similar to the one used for Reliability Lines. However, instead of being solid-colored, the areas are filled with a hatch pattern. Each area is classified using the following key.

<u>Highest Reliability Value in Feet</u>	<u>Color</u>
1 - 3	Blue Hatching
4 - 40	Purple Hatching
41 - 200	Green Hatching
Over 200	Red Hatching

2.0.6 GCDB ArcInfo Export (Interchange) Files

ArcInfo interchange files, commonly known as export files, are binary files that allow easy transfer of coverage data. ArcInfo interchange files may be created for township data sets that successfully pass through the Data Prep conversion and topology-checking routines. Users create the interchange files by selecting townships and clicking the "Export E00" button on the DCSS user interface.

The export function packages, at a minimum three data sets:

- 1) GCDB coverage
- 2) LABELS_GCDB coverage
- 3) Township.MET - FGDC compliant metadata file

Optionally, the export function will also create interchange files for the following data sets if they exist:

- 4) CTRL coverage
- 5) REL_LINES_UTM coverage
- 6) REL AREAS_UTM coverage

The interchange files are written to the \$GCDB_EXPORTS directory and take the form of township name followed by coverage identifier and the .e00 extension. For example, the data sets created from CO PM06, township t33s63w are exported to files named co06t0330s0630w_gcdb.e00, co06t0330s0630w_lbl.e00 and co06t0330s0630w.met.

2.1 Definitions of Table Headings, Table Suffixes and Item Types

2.1.1 Table Headings

COL	Starting position within the record for the item that follows.
ITEM NAME	Name of the data field.
WIDTH	Internal storage width of the item.
OUTPUT	Output width of the item.
TYPE	Item type.
N.DEC	Number of decimal places.
A/I	Item generated by ArcInfo.

2.1.2 Table Suffixes

Spatial features are managed by ArcInfo in database tables that associate coordinate data with attribute information. Listed below are the table name extensions that correspond to the features stored in the table. Standard items, those maintained by ArcInfo are also listed. The italic references, *cover* and *subclass*, are generic references to the coverage and subclass name, respectively.

.PAT **Point** Attribute Table
Standard items: Area, Perimeter, *cover#*, *cover-id*

.PAT **Polygon** Attribute Table
Standard items: Area, Perimeter, *cover#*, *cover-id*

Note: Point features are simply polygon features with zero dimension (i.e. no area or perimeter). The area and perimeter fields are set to zero for point features, thus distinguishing them from polygon features.

.PAT<subclass> Region Subclass Attribute Table
Standard items: Area, Perimeter, *subclass#*, *subclass-id*

.AAT **Arc** Attribute Table
Standard Items: FNODE#, TNODE#, LPOLY#, RPOLY#, Length,
cover#, *cover-id*

.NAT Node Attribute Table
Standard Items: ARC#, *cover#*, *cover-id*

2.1.3 Item Types Used in GCDB Coverages

B	Binary	1-4 byte integer item. No decimal positions allowed.
C	Character	Character field.
F	Floating	Number stored in floating-point format.
I	Integer	1-16 byte integer item. No decimal positions are allowed.
N	Number	Number with decimal places.

2.2 Coverage Tables

2.2.1 CONTROL POINT ATTRIBUTES (ctrl.pat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Not used
9	PERIMETER	-	8	18	F	5	Y	Not used
17	CTRL#	-	4	5	B	-	Y	Internal control point ID
21	CTRL-ID	-	4	5	B	-	Y	User control point ID
25	ELEV	-	9	9	N	3	N	Elevation in feet
34	ERROR_N	YACC	4	4	I	-	N	Error Estimate North in feet
38	ERROR_E	XACC	5	5	I	-	N	Error Estimate East in feet
42	POINT_ID	-	6	6	C	-	N	Control Point/Station ID
48	X-COORD	EAST	14	14	N	9	N	LONGITUDE of the Control Point in decimal degrees
62	Y-COORD	NORTH	14	14	N	9	N	LATITUDE of the Control Point in decimal degrees
76	AVAIL_FLAG	-	1	1	C	-	N	Flag indicating that this control point is available, but was not actually used for control purposes (Y, N)

2.2.2 LABEL ATTRIBUTES (labels_gcdb.pat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Not used
9	PERIMETER	-	8	18	F	5	Y	Not used
17	LABELS_GCDB#	-	4	5	B	-	Y	Internal label point ID
21	LABELS_GCDB-ID	-	4	5	B	-	Y	User label point ID
25	SEC_NO	SECTN	3	3	C	-	N	Section number
28	SEC_FRAC	SECFRT	1	1	C	-	N	Not used - Reserved for future use. Section fractional code. (Blank) = full section 1 = 1/4 2 = 1/2 3 = 3/4
29	SEC_DUP	SECDUP	1	1	C	-	N	Not used - Reserved for future use. (Blank) = not duplicate A = First duplicate (second occurrence of same section number). B = Second duplicate (third occurrence of same section number).
30	NOMINAL_LOCATION	-	1	1	C	-	N	Nominal location (A-P, Q, Z)
31	MINOR_SUB	-	4	4	C	-	N	Minor subdivision codes (R-Y)
35	SURVEY_TYPE	SURSYS	1	1	C	-	N	Survey type (A,B,C,D,E,G,H,I,J,K,L,M,N, O,P,Q,R,S,T,U,W,X,Y,Z)
36	SURVEY_NUMBER	SURNUM1	5	5	C	-	N	Survey number
41	SURVEY_SUFFIX	SURNUM2	2	2	C	-	N	Survey suffix
43	SURVEY_NOT	-	3	3	C	-	N	Survey note
46	ACREAGE	PARA	9	9	C	-	N	Acreage
55	ACRE_SRC_CD	PARSEC	1	1	C	-	N	Source of acreage values (0,A,B,C,D,E, F)
56	DUP_DESC_CD	DESCDUP	1	1	C	-	N	Land description duplicate code
57	DISCREPENCY_CD	DISCCD	1	1	C	-	N	Used when GCDB and LLD locations differ (1-5)
58	EXCEPTION_CD	-	3	3	C	-	N	Exceptions to survey type rules Numbers reference specific rules.

LABEL ATTRIBUTES - Continued

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
61	STATE_CD	STATE	2	2	C	-	N	Two letter state abbreviation
63	PRINMER_CD	PRIMER	2	2	C	-	N	Principal meridian code
65	TIER_NO	TOWN	3	3	C	-	N	Tier number
68	TIER_FRAC	TWNFRT	1	1	C	-	N	Tier fractional code 0 = Not a fractional tier 1 = 1/4 Tier 2 = 1/2 Tier 3 = 3/4 Tier
69	TIER_DIR_CD	TWNDIR	1	1	C	-	N	Tier direction code (N, S)
70	RANGE_NO	RANGE	3	3	C	-	N	Range number
73	RANGE_FRAC	RNGFRT	1	1	C	-	N	Range fractional code 0 = Not a fractional range 1 = 1/4 Range 2 = 1 /2 Range 3 = 3/4 Range
74	RANGE_DIR_CD	RNGDIR	1	1	C	-	N	Range direction code (E, W).
75	TOWNSHIP_DUP_CD	TWNDUP	1	1	C	-	N	Township duplicate code. (Blank) = Not a duplicate township. A = First duplicate (second occurrence of same township). B = Second duplicate (third occurrence of same township).
76	LATITUDE	-	14	14	N	9	N	LABEL_LAT - Latitude of label point in decimal degrees.
90	LONGITUDE	-	14	14	N	9	N	LABEL_LONG - Longitude of label point in decimal degrees.
104	SUBSURF_ONLY	-	1	1	C	-	N	Code indicating the survey applies to the subsurface only. (Y or blank)
105	VALIDATION_CD	VALIDCD	1	1	C	-	N	Code to report whether the GCDB and LLD land descriptions match. (Y, N, V)

2.2.3 NODE ATTRIBUTES (gcdb.nat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	ARC#	-	4	5	B	-	Y	Internal arc number corresponding to the node
5	GCDB#	-	4	5	B	-	Y	Internal node ID
9	GCDB-ID	-	4	5	B	-	Y	User node ID
13	ELEV	-	9	9	N	2	N	Elevation
22	SOFTWARE	-	4	4	C	-	N	Collection software (GMM/PCCS)
26	ERROR_N	YACC	4	4	I	-	N	Error Ellipse North in feet (GMM). Average Reliability in feet (PCCS)
30	ERROR_E	XACC	5	5	I	-	N	Error Ellipse East in feet (GMM). Maximum Reliability in feet (PCCS)
35	LINE_CNT	-	3	3	I	-	N	Line count
38	LINE_TYPE	-	2	2	I	-	N	Line type 0 = Section/Township/Special survey line 1 = 20 chain line 2 = 40 chain line 3 = 60 chain line 4 = Blank line
40	LINE_PEN	-	2	2	I	-	N	Pen command
42	LX_SEC	-	1	1	I	-	N	Not used
43	POINT_ID	-	6	6	C	-	N	Station/Point ID
49	X-UTM-ST	-	11	11	N	2	N	X - COORDINATE in UTM, State Plane, or map inches derived from Longitude of GCDB Point
60	Y-UTM-ST	-	11	11	N	2	N	Y - COORDINATE in UTM, State Plane, or map inches derived from Latitude of GCDB Point
71	X-COORD	EAST	14	14	N	9	N	LONGITUDE of point in decimal degrees
85	Y-COORD	NORTH	14	14	N	9	N	LATITUDE of point in decimal degrees
99	SYM_VALUE	-	3	3	I	-	N	Symbol value for node

2.2.4 ARC ATTRIBUTES (gcdb.aat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	FNODE#	-	4	5	B	-	Y	Internal number of the from-node
5	TNODE#	-	4	5	B	-	Y	Internal number of the to-node
9	LPOLY#	-	4	5	B	-	Y	Left polygon number
13	RPOLY#	-	4	5	B	-	Y	Right polygon number
17	LENGTH	-	8	18	F	5	Y	Length of arc
25	GCDB#	-	4	5	B	-	Y	Internal Arc ID
29	GCDB-ID	-	4	5	B	-	Y	User Arc ID
33	TYPE	-	6	6	I	-	N	TYPE of GCDB line derived from Point ID value. 0 = Township Line 1 = Section Line 2 = Subdivision Line 3 = Special Line 4 = Blank Line
39	SYMBOL	-	6	6	I	-	N	Symbol used to draw GCDB Line based on TYPE
45	ORIG_ARC	-	4	5	B	-	N	Original arc flag
49	DANGLE_FLAG	-	4	4	C	-	N	Dangle flag

2.2.5 ARC ATTRIBUTES (for tangent, circular, and spiral curves - gcdb.aat)

For GCDB Data Prep v1.03.00 and v1.04 this table is not saved.

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPU T	TYPE	N.DEC	A/I	DESCRIPTION
1	FNODE#	-	4	5	B	-	Y	Internal number of the from-node
5	TNODE#	-	4	5	B	-	Y	Internal number of the to-node
9	LPOLY#	-	4	5	B	-	Y	Left polygon number
13	RPOLY#	-	4	5	B	-	Y	Right polygon number
17	LENGTH	-	8	18	F	5	Y	Length of arc
25	GCDB#	-	4	5	B	-	Y	Internal Arc ID
29	GCDB-ID	-	4	5	B	-	Y	User Arc ID
33	ANGLE	-	10	10	C	-	Y	The long chord direction of circular curves and spirals
43	DISTANCE	LNGCRD	8	8	C	-	Y	The long chord distance length of circular curves and spirals
51	RADIUS	RAD	8	8	C	-	Y	The circular curve radius or the first radius of a spiral
59	DELTA	CENANG	10	10	C	-	Y	The delta angle of a circular curve or spiral
69	TANGENT	-	8	8	C	-	Y	The tangent length of a circular curve or the first tangent length of a spiral
77	ARCLENGTH	LNGCUR	8	8	C	-	Y	The arc length of a circular curve or spiral
85	SIDE	DIR	1	1	C	-	Y	The side where the radius point (for curves) or radius points (for spirals) are located with respect to circular curve or spiral (to the right or to the left of the circular curve or spiral) concavity.
86	RADIUS2	-	8	8	C	-	Y	The second radius of a spiral. TANGENT2 is the second tangent length of a spiral
94	TANGENT2	-	8	8	C	-	Y	The second tangent length of a spiral
102	TYPE	-	6	6	I	-	N	TYPE of GCDB line derived from point ID value. 0 = Township Line 1 = Section Line 2 = Sub-Division Line 3 = Special Line 4 = Blank Line
108	SYMBOL	-	6	6	I	-	N	Symbol used to draw GCDB Line based on TYPE

ARC ATTRIBUTES - Continued

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYP E	N.DEC	A/I	DESCRIPTION
114	ORIG_ARC	-	4	5	B	-	N	Original arc flag
118	DANGLE_FLAG	-	4	4	C	-	N	Dangle flag

2.2.6 POLYGON ATTRIBUTES (gcdb.pat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPU T	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Area of polygon
9	PERIMETER	-	8	18	F	5	Y	Perimeter of polygon
17	GCDB#	-	4	5	B	-	Y	Internal polygon ID
21	GCDB-ID	-	4	5	B	-	Y	User polygon ID
25	SEC_NO	SECTN	3	3	C	-	N	Section number
28	SEC_FRAC	SECFRT	1	1	C	-	N	Not used - Reserved for future use. Section fractional code (Blank) = full section 1 = 1/4 2 = 1/2 3 = 3/4
29	SEC_DUP	SECDUP	1	1	C	-	N	Not used - Reserved for future use. (Blank) = not duplicate A = First duplicate (second occurrence of same section number). B = Second duplicate (third occurrence of same section number).
30	NOMINAL_LOCATION	-	1	1	C	-	N	Nominal location (A-P, Q, Z)
31	MINOR_SUB	-	4	4	C	-	N	Minor subdivision codes (R-Y)
35	SURVEY_TYPE	SURSYS	1	1	C	-	N	Survey type (A,B,C,D,E,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,W,X,Y,Z)
36	SURVEY_NUMBER	SURNUM1	5	5	C	-	N	Survey number
41	SURVEY_SUFFIX	SURNUM2	2	2	C	-	N	Survey suffix
43	SURVEY_NOTE	-	3	3	C	-	N	Survey note
46	ACREAGE	PARA	9	9	C	-	N	Acreage
55	ACRE_SRC_CD	PARSEC	1	1	C	-	N	Source of acreage values (0,A,B,C,D,E, F)
56	DUP_DESC_CD	DESCDUP	1	1	C	-	N	Land description duplicate code
57	DISCREPANCY_CD	DISCCD	1	1	C	-	N	Used when GCDB and LLD locations differ (1-5)
58	EXCEPTION_CD	-	3	3	C	-	N	Exceptions to survey type rules. Numbers reference specific rules.
61	STATE_CD	STATE	2	2	C	-	N	Two letter state abbreviation
63	PRINMER_CD	PRIMER	2	2	C	-	N	Principal meridian code

POLYGON ATTRIBUTES - Continued

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
65	TIER_NO	TOWN	3	3	C	-	N	Tier number
68	TIER_FRAC	TWNFRT	1	1	C	-	N	Tier fractional code 0 = Not a fractional tier 1 = 1/4 Tier 2 = 1/2 Tier 3 = 3/4 Tier
69	TIER_DIR_CD	TWNDIR	1	1	C	-	N	Tier direction code (N, S)
70	RANGE_NO	RANGE	3	3	C	-	N	Range number
73	RANGE_FRAC	RNGFRT	1	1	C	-	N	Range fractional code 0 = Not a fractional range 1 = 1/4 Range 2 = 1/2 Range 3 = 3/4 Range
74	RANGE_DIR_CD	RNGDIR	1	1	C	-	N	Range direction code (E, W)
75	TOWNSHIP_DUP_CD	TWNDUP	1	1	C	-	N	Township duplicate code. (Blank) = Not a duplicate township. A = First duplicate (second occurrence of same township). B = Second duplicate (third occurrence of same township).
76	LATITUDE	-	14	14	N	9	N	LABEL_LAT - Latitude of label point in decimal degrees
90	LONGITUDE	-	14	14	N	9	N	LABEL LONG - Longitude of label point in decimal degrees
104	SUBSURF_ONLY	-	1	1	C	-	N	Code indicating the survey applies to the subsurface only. (Y or blank)
105	VALIDATION_CD	VALIDCD	1	1	C	-	N	Code to report whether the GCDB and LLD land descriptions match. (Y ,N, V)

2.2.7 REGION ATTRIBUTES

SUBCLASS TWP (gcdb.pattwp)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Area of region
9	PERIMETER	-	8	18	F	5	Y	Perimeter of region
17	TWP#	-	4	5	B	-	Y	Internal region ID
21	TWP-ID	-	4	5	B	-	Y	User region ID
25	STATE_CD	STATE	2	2	C	-	N	Two letter state abbreviation
27	PRINMER_CD	PRIMER	2	2	C	-	N	Principal meridian code
29	TIER_NO	TOWN	3	3	C	-	N	Tier number
32	TIER_FRAC	TWNFRT	1	1	C	-	N	Tier fractional code 0 = Not a fractional tier 1 = 1/4 Tier 2 = 1/2 Tier 3 = 3/4 Tier
33	TIER_DIR_CD	TWNDIR	1	1	C	-	N	Tier direction code (N, S)
34	RANGE_NO	RANGE	3	3	C	-	N	Range number
37	RANGE_FRAC	RNGFRT	1	1	C	-	N	Range fractional code 0 = Not a fractional range 1 = 1/4 Range 2 = 1 /2 Range 3 = 3/4 Range
38	RANGE_DIR_CD	RNGDIR	1	1	C	-	N	Range direction code (E, W)
39	TOWNSHIP_DUP_CD	TWNDUP	1	1	C	-	N	Township duplicate code. (Blank) = Not a duplicate township. A = First duplicate (second occurrence of same township). B = Second duplicate (third occurrence of same township)
	REDEFINED ITEMS	-						
25	TOWNSHIP	-	15	15	C	-	N	State, Principal Meridian, Township and Range

SUBCLASS SECT (gcdb.patsect)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPU T	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Area of region
9	PERIMETER	-	8	18	F	5	Y	Perimeter of region
17	SECT#	-	4	5	B	-	Y	Internal region ID
21	SECT-ID	-	4	5	B	-	Y	User region ID
25	STATE_CD	STATE	2	2	C	-	N	Two letter state abbreviation
27	PRINMER_CD	PRIMER	2	2	C	-	N	Principal meridian code
29	TIER_NO	TOWN	3	3	C	-	N	Tier number
32	TIER_FRAC	TWNFRT	1	1	C	-	N	Tier fractional code 0 = Not a fractional tier. 1 = 1/4 Tier 2 = 1/2 Tier 3 = 3/4 Tier
33	TIER_DIR_CD	TWNDIR	1	1	C	-	N	Tier direction code (N, S)
34	RANGE_NO	RANGE	3	3	C	-	N	Range number
37	RANGE_FRAC	RNGFRT	1	1	C	-	N	Range fractional code 0 = Not a fractional range 1 = 1/4 Range 2 = 1/2 Range 3 = 3/4 Range
38	RANGE_DIR_CD	RNGDIR	1	1	C	-	N	Range direction code (E, W)
39	TOWNSHIP_DUP_CD	TWNDUP	1	1	C	-	N	Township duplicate code. (Blank) = Not a duplicate township. A = First duplicate (second occurrence of same township). B = Second duplicate (third occurrence of same township)
40	SECTION	SECTN	3	3	C	-	N	Section number
43	SEC_FRAC	SECFRT	1	1	C	-	N	Section fractional code
44	SEC_DUP	SECDUP	1	1	C	-	N	Section duplicate code
	REDEFINED ITEMS	-						
25	TOWNSHIP	-	15	15	C	-	N	State, Principal Meridian, Township and Range

SUBCLASS LADESC (gcdb.patladesc)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPU T	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Area of polygon
9	PERIMETER	-	8	18	F	5	Y	Perimeter of polygon
17	LADESC#	-	4	5	B	-	Y	Internal polygon ID
21	LADESC-ID	-	4	5	B	-	Y	User polygon ID
25	SEC_NO	SECTN	3	3	C	-	N	Section number
28	SEC_FRAC	SECFRT	1	1	C	-	N	Not used - Reserved for future use. Section fractional code (Blank) = full section 1 = 1/4 2 = 1/2 3 = 3/4
29	SEC_DUP	SECDUP	1	1	C	-	N	Reserved for future use. (Blank) = not duplicate A = First duplicate (second occurrence of same section number) B = Second duplicate (third occurrence of same section number)
30	NOMINAL_LOCATION		1	1	C	-	N	Nominal location (A-P, Q, Z)
31	MINOR_SUB		4	4	C	-	N	Minor subdivision codes (R-Y)
35	SURVEY_TYPE	SURSYS	1	1	C	-	N	Survey type (A,B,C,D,E,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,W,X,Y,Z)
36	SURVEY_NUMBER	SURNUM1	5	5	C	-	N	Survey number
41	SURVEY_SUFFIX	SURNUM2	2	2	C	-	N	Survey suffix
43	SURVEY_NOTE	-	3	3	C	-	N	Survey note
46	ACREAGE	PARA	9	9	C	-	N	Acreage
55	ACRE_SRC_CD	PARSEC	1	1	C	-	N	Source of acreage values (0,A,B,C,D,E, F)
56	DUP_DESC_CD	DESCDUP	1	1	C	-	N	Land description duplicate code
57	DISCREPANCY_CD	DISCCD	1	1	C	-	N	Used when GCDB and LLD locations differ (1-5)
58	EXCEPTION_CD	-	3	3	C	-	N	Exceptions to survey type rules Numbers reference specific rules
61	STATE_CD	STATE	2	2	C	-	N	Two letter state abbreviation
63	PRINMER_CD	PRIMER	2	2	C	-	N	Principal meridian code

SUBCLASS LADESC - Continued

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPU T	TYPE	N.DEC	A/I	DESCRIPTION
65	TIER_NO	TOWN	3	3	C	-	N	Tier number.
68	TIER_FRAC	TWNFRT	1	1	C	-	N	Tier fractional code 0 = Not a fractional tier 1 = 1/4 Tier 2 = 1/2 Tier 3 = 3/4 Tier
69	TIER_DIR_CD	TWNDIR	1	1	C	-	N	Tier direction code (N, S).
70	RANGE_NO	RANGE	3	3	C	-	N	Range number.
73	RANGE_FRAC	RNGFRT	1	1	C	-	N	Range fractional code 0 = Not a fractional range 1 = 1/4 Range 2 = 1 /2 Range 3 = 3/4 Range
74	RANGE_DIR_CD	RNGDIR	1	1	C	-	N	Range direction code (E,W).
75	TOWNSHIP_DUP_CD	TWNDUP	1	1	C	-	N	Township duplicate code. (Blank) = Not a duplicate township. A = First duplicate (second occurrence of same township). B = Second duplicate (third occurrence of same township).
76	LATITUDE	-	14	14	N	9	N	LABEL LAT - Latitude of label point in decimal degrees.
90	LONGITUDE	-	14	14	N	9	N	LABEL LONG - Longitude of label point in decimal degrees.
104	SUBSURF_ONLY	-	1	1	C	-	N	Code indicating subsurfac only survey. (Y or blank)
105	VALIDATION_CD	VALIDCD	1	1	C	-	N	Code to report whether GCDB and LLD land descriptions match. (Y, N, V)

2.2.7 RELIABILITY ARC ATTRIBUTE TABLE (rel_lines_utm.aat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	FNODE#	-	4	5	B	-	Y	Internal number of the from-node
5	TNODE#	-	4	5	B	-	Y	Internal number of the to-node
9	LPOLY#	-	4	5	B	-	Y	Left polygon number
13	RPOLY#	-	4	5	B	-	Y	Right polygon number
17	LENGTH	-	8	18	F	5	Y	Length of arc
25	REL_LINES_UTM#	-	4	5	B	-	Y	Internal feature ID
29	REL_LINES_UTM-ID	-	4	5	B	-	Y	User feature ID
33	FROM_ERROR_N	FYACC	4	4	I	-	N	From Error Ellipse North in feet (GMM) From Average reliability in feet (PCCS)
37	FROM_ERROR_E	FXACC	4	4	I	-	N	From Error Ellipse East in feet(GMM) From Maximum Reliability in feet (PCCS)
41	TO_ERROR_N	TYACC	4	4	I	-	N	To Error Ellipse North in feet(GMM) To Average Reliability in feet (PCCS)
45	TO_ERROR_E	TXACC	4	4	I	-	N	To Error Ellipse East in feet (GMM). To Maximum Reliability in feet (PCCS)
49	REL_TYPE	-	15	15	C	-	N	Reliability Line Type (surveyed or computed)
64	HIGHEST_REL_VALUE	-	4	4	I	-	N	Highest Reliability Value Used for classification by reliability
68	FROM_POINT_ID	-	6	6	C	-	N	Control Point/Station ID
74	TO_POINT_ID	-	6	6	C	-	N	Control Point/Station ID
80	TOWNSHIP	-	16	16	C	-	N	Township Name

2.2.8 RELIABILITY AREAS POLYGON ATTRIBUTE TABLE (rel_areas_utm.pat)

COL	ITEM NAME	FGDC NAME	WIDTH	OUTPUT	TYPE	N.DEC	A/I	DESCRIPTION
1	AREA	-	8	18	F	5	Y	Internal area of feature
9	PERIMETER	-	8	18	F	5	Y	Internal perimeter of feature
17	REL_LINES_UTM#	-	4	5	B	-	Y	Internal feature ID
21	REL_LINES_UTM-ID	-	4	5	B	-	Y	User feature ID
25	FROM_ERROR_N	FYACC	4	4	I	-	N	From Error Ellipse North in feet (GMM). From Average Reliability in feet (PCCS)
29	FROM_ERROR_E	FXACC	4	4	I	-	N	From Error Ellipse East in feet (GMM). From Maximum Reliability in feet (PCCS)
33	TO_ERROR_N	TYACC	4	4	I	-	N	To Error Ellipse North in feet (GMM) To Average Reliability in feet (PCCS)
37	TO_ERROR_E	TXACC	4	4	I	-	N	To Error Ellipse East in feet (GMM). To Maximum Reliability in feet (PCCS)
41	HI_REL_VALUE	-	4	4	I	-	N	Highest Reliability Value Used for classification by reliability
45	FROM_POINT_ID	-	6	6	C	-	N	From Control Point/Station ID
51	TO_POINT_ID	-	6	6	C	-	N	To Control Point/Station ID
57	TOWNSHIP	-	16	16	C	-	N	Township Name

2.3 Coverage Table Examples

2.3.1 CTRL.PAT

```
AREA      = 0.00000
PERIMETER = 0.00000
CTRL#     = 9
CTRL-ID   = 9
ELEV      = 6000.00
ERROR_N   = 40
ERROR_E   = 40
POINT_ID  = 300600
X-COORD   = -106.594455556
Y-COORD   = 43.542048056
AVAIL_FLAG = Y
```

2.3.2 LABELS_GCDB.PAT

```
AREA      = 0.00000
PERIMETER = 0.00000
LABELS_GCDB# = 2
LABELS_GCDB-ID = 2
SEC_NO    = 001
SEC_FRAC  =
SEC_DUP   =
NOMINAL_LOCATION = D
MINOR_SUB =
SURVEY_TYPE = A
SURVEY_NUMBER =
SURVEY_SUFFIX =
SURVEY_NOTE =
ACREAGE   = 40.000
ACRE_SRC_CD = 0
DUP_DESC_CD =
DISCREPANCY_CD =
EXCEPTION_CD =
STATE_CD   = WY
PRINMER_CD = 06
TIER_NO    = 041
TIER_FRAC  = 0
TIER_DIR_CD = N
RANGE_NO   = 081
RANGE_FRAC = 0
RANGE_DIR_CD = W
TOWNSHIP_DUP_CD =
LATITUDE  = 43.551183306
LONGITUDE = 106.518346750
SUBSURF_ONLY =
VALIDATION_CD =
```

2.3.3 GCDB.NAT

```
ARC#      = 1
GCDB#    = 2
GCDB-ID  = 2
ELEV     = 6000.00
SOFTWARE = PCCS
ERROR_N  = 214
ERROR_E  = 455
LINE_CNT = 24
LINE_TYPE = 3
```

```

LINE_PEN      = 4
LX_SEC       = 0
POINT_ID     = 660700
X-UTM-ST    = 377159.88
Y-UTM-ST    = 4823531.82
X-COORD     = -106.520832806
Y-COORD     = 43.556570000
SYM_VALUE    = 122

```

2.3.4 GCDB.AAT

```

FNODE#        = 4
TNODE#        = 3
LPOLY#        = 1
RPOLY#        = 4
LENGTH        = 0.00498
GCDB#         = 3
GCDB-ID      = 1456
TYPE          = 0
SYMBOL        = 11
ORIG_ARC     = 1456
DANGLE_FLAG   = 0

```

2.3.5 GCDB.AAT (with cogo attributes for curves)

```

FNODE#        = 577
TNODE#        = 572
LPOLY#        = 0
RPOLY#        = 0
LENGTH        = 37.37700
GCDB#         = 1149
GCDB-ID      = 1149
ANGLE         = N17-22-20E
DISTANCE      = 35.50
RADIUS         = 33.61
DELTA          = 63-45-12
TANGENT        = 20.90
ARCLENGTH     = 37.40
SIDE           = L
RADIUS2        =
TANGENT2      =
TYPE           = 0
SYMBOL         = 14
ORIG_ARC      = 0
DANGLE_FLAG    =

```

2.3.6 GCDB.PAT

```

AREA          = 0.00002
PERIMETER     = 0.01713
GCDB#         = 2
GCDB-ID      = 525
SEC_NO        = 001
SEC_FRAC      =
SEC_DUP       =
NOMINAL_LOCATION = A
MINOR_SUB     =
SURVEY_TYPE   = 0
SURVEY_NUMBER  = 1
SURVEY_SUFFIX  =
SURVEY_NOTE   =
ACREAGE        = 40.000
ACRE_SRC_CD   = 0
DUP_DESC_CD   =

```

```
DISCREPANCY_CD =
EXCEPTION_CD =
STATE_CD = WY
PRINMER_CD = 06
TIER_NO = 041
TIER_FRAC = 0
TIER_DIR_CD = N
RANGE_NO = 081
RANGE_FRAC = ORANGE_DIR_CD
TOWNSHIP_DUP_CD =
LATITUDE = 43.554781111
LONGITUDE = 106.518345028
SUBSURF_ONLY =
VALIDATION_CD =
```

2.3.7 GCDB.PATTWP

```
AREA = 0.01008
PERIMETER = 0.43709
TWP# = 2
TWP-ID = 2
STATE_CD = WY
PRINMER_CD = 06
TIER_NO = 041
TIER_FRAC = 0
TIER_DIR_CD = N
RANGE_NO = 081
RANGE_FRAC = 0
RANGE_DIR_CD = W
TOWNSHIP_DUP_CD =
```

2.3.8 GCDB.PATSECT

```
AREA = 0.00027
PERIMETER = 0.07174
SECT# = 6
SECT-ID = 6
STATE_CD = WY
PRINMER_CD = 06
TIER_NO = 041
TIER_FRAC = 0
TIER_DIR_CD = N
RANGE_NO = 081
RANGE_FRAC = 0
RANGE_DIR_CD = W
TOWNSHIP_DUP_CD =
SECTION = 003
SEC_FRAC =
SEC_DUP =
```

2.3.9 REL_LINES_UTM.AAT

```
FNODE#      = 0
TNODE#      = 0
LPOLY#      = 0
RPOLY#      = 0
LENGTH      = 1610.49617
REL_LINES_UTM#    = 2
REL_LINES_UTM-ID   = 2
FROM_ERROR_N     = 39
FROM_ERROR_E     = 39
TO_ERROR_N       = 41
TO_ERROR_E       = 41
TYPE            = surveyed
HI_REL_VALUE     = 41
FROM_POINT_ID    = 100200
TO_POINT_ID      = 100300
TOWNSHIP        = nm23t0020n0230e
```

2.3.10 REL AREAS_UTM.PAT

```
AREA          = 39926.20063
PERIMETER     = 3266.72474
REL_AREAS_UTM#    = 2
REL_AREAS_UTM-ID   = 105
FROM_ERROR_N     = 42
FROM_ERROR_E     = 41
TO_ERROR_N       = 41
TO_ERROR_E       = 41
HI_REL_VALUE     = 42
FROM_POINT_ID    = 700700
TO_POINT_ID      = 600700
TOWNSHIP        = nm23t0020n0230e
```

3.0 Translation to Coverage Items (GCDB or ArcInfo) to Federal Geographic Data Committee (FGDC) Tables and Items.

3.0.1 CONTROL POINT ATTRIBUTES (ctrl.pat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
CTRL#	N/A	N/A
CTRL-ID	N/A	N/A
ELEV	N/A	N/A
ERROR_N	COORDS	YACC
ERROR_E	COORDS	XACC
POINT_ID	N/A	N/A
X-COORD	COORDS	EAST
Y-COORD	COORDS	NORTH
AVAIL_FLAG	N/A	N/A

* Different methods may be used to define reliability. GMM records the error in feet for each coordinate, while PCCS records an average and maximum reliability for the entire township.

** GCDB Coverage Format utilizes a 6 character point-id value. FGDC uses a three-character corner number.

3.0.2 LABEL ATTRIBUTES (labels_gcdb.pat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
LABELS_GCDB#	N/A	N/A
LABELS_GCDB-ID	N/A	N/A
SEC_NO	FIRST	SECTN
SEC_FRAC	FIRST	SECFRT
SEC_DUP	FIRST	SECDUP
NOMINAL_LOCATION	N/A	N/A
MINOR_SUB	N/A	N/A
SURVEY_TYPE	SURDES	SURSYS
SURVEY_NUMBER	SURDES	SURNUM1
SURVEY_SUFFIX	SURDES	SURNUM2
SURVEY_NOTE	N/A	N/A
ACREAGE	PARARA	PARA
ACRE_SRC_CD	PARARA	PARSEC
DUP_DESC_CD	LADESC	DESCCD
DISCREPENCY_CD	LADESC	DISCCD
EXCEPTION_CD	N/A	N/A
STATE_CD	TWNSHP	STATE
PRINMER_CD/PRIME	TWNSHP	PRIMER
TIER_NO	TWNSHP	TOWN
TIER_FRAC	TWNSHP	TWNFRT
TIER_DIR_CD	TWNSHP	TWNDIR
RANGE_NO	TWNSHP	RANGE
RANGE_FRAC	TWNSHP	RNGFRT
RANGE_DIR_CD	TWNSHP	RNGDIR

LABEL ATTRIBUTES - *Continued*

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
TOWNSHIP_DUP_CD	TWNSHP	TWNDUP
LATITUDE/ NORTH	N/A	N/A
LONGITUDE/ EAST	N/A	N/A
SUBSURF_ONLY	N/A	N/A
VALIDATION_CD	LADESC	VALIDCD

3.0.3 NODE ATTRIBUTES (gcdb.nat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
ARC#	N/A	N/A
GCDB#	N/A	N/A
GCDB-ID	N/A	N/A
ELEV	N/A	N/A
SOFTWARE	N/A	N/A
ERROR_N	COORDS	YACC
ERROR_E	COORDS	XACC
LINE_CNT	N/A	N/A
LINE_TYPE	N/A	N/A
LINE_PEN	N/A	N/A
LX_SEC	N/A	N/A
POINT_ID	N/A	N/A
X-UTM-ST	N/A	N/A
Y-UTM-ST	N/A	N/A
X-COORD	COORDS	EAST
Y-COORD	COORDS	NORTH
SYM_VALUE	N/A	N/A

* Different methods may be used to define reliability. GMM records the error in feet for each location, while PCCS records an average reliability.

** The GCDB Coverage Format utilizes a 6 character point-id value. FGDC uses a three-character corner number.

3.0.4 ARC ATTRIBUTES (gcdb.aat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
FNODE#	N/A	N/A
TNODE#	N/A	N/A
LPOLY#	N/A	N/A
RPOLY#	N/A	N/A
LENGTH	N/A	N/A
GCDB#	N/A	N/A
GCDB-ID	N/A	N/A
TYPE	N/A	N/A
SYMBOL	N/A	N/A
ORIG_ARC	N/A	N/A
DANGLE_FLAG	N/A	N/A

3.0.5 ARC ATTRIBUTES (gcdb.aat - for tangent, circular and spiral curves)

For Data Prep v1.03.00 and v1.04 this table is not saved.

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
FNODE#	N/A	N/A
TNODE#	N/A	N/A
LPOLY#	N/A	N/A
RPOLY#	N/A	N/A
LENGTH	N/A	N/A
GCDB#	N/A	N/A
GCDB-ID	N/A	N/A
ANGLE	N/A	N/A
DISTANCE	CIRCUR	LNGCRD
RADIUS	CIRCUR	RAD
DELTA	CIRCUR	CENANG
TANGENT	N/A	N/A
ARCLENGTH	CIRCUR	LNGCUR
SIDE	N/A	DIR
RADIUS2	N/A	N/A
TANGENT2	N/A	N/A
TYPE	N/A	N/A
SYMBOL	N/A	N/A
ORIG_ARC	N/A	N/A
DANGLE_FLAG	N/A	N/A

3.0.6 POLYGON ATTRIBUTES (gcdb.pat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
GCDB#	N/A	N/A
GCDB-ID	N/A	N/A
SEC_NO	FIRST	SECTN
SEC_FRAC	FIRST	SECFRT
SEC_DUP	FIRST	SECDUP
NOMINAL_LOCATION	N/A	N/A
MINOR_SUB	N/A	N/A
SURVEY_TYPE	SURDES	SURSYS
SURVEY_NUMBER	SURDES	SURNUM1
SURVEY_SUFFIX	SURDES	SURNUM2
SURVEY_NOTE	N/A	N/A
ACREAGE	PARARA	PARA
ACRE_SRC_CD	PARARA	PARSEC
DUP_DESC_CD	LADESC	DESCDUP
DISCREPANCY_CD	LADESC	DISCCD
EXCEPTION_CD	N/A	N/A
STATE_CD	TWNSHP	STATE
PRINMER_CD	TWNSHP	PRIMER
TIER_NO	TWNSHP	TOWN
TIER_FRAC	TWNSHP	TWNFRT
TIER_DIR_CD	TWNSHP	TWNDIR
RANGE_NO	TWNSHP	RANGE
RANGE_FRAC	TWNSHP	RNGFRT

POLYGON ATTRIBUTES - *Continued*

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
RANGE_DIR_CD	TWNSHP	RNGDIR
TOWNSHIP_DUP_CD	TWNSHP	TWNDUP
LATITUDE	N/A	N/A
LONGITUDE	N/A	N/A
SUBSURF_ONLY	N/A	N/A
VALIDATION_CD	LADESC	VALIDCD

3.0.7 REGION ATTRIBUTES

SUBCLASS TWP (gcdb.pattwp)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
TWP#	N/A	N/A
TWP-ID	N/A	N/A
STATE_CD	TWNSHP	STATE
PRINMER_CD	TWNSHP	PRIMER
TIER_NO	TWNSHP	TOWN
TIER_FRAC	TWNSHP	TWNFRT
TIER_DIR_CD	TWNSHP	TWNDIR
RANGE_NO	TWNSHP	RANGE
RANGE_FRAC	TWNSHP	RNGFRT
RANGE_DIR_CD	TWNSHP	RNGDIR
TOWNSHIP_DUP_CD	TWNSHP	TWNDUP
REDEFINED ITEM	TWNSHP	
TOWNSHIP	N/A	N/A

SUBCLASS SECT (gcdb.patsect)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
SECT#	N/A	N/A
SECT-ID	N/A	N/A
STATE_CD	TWNSHP	STATE
PRINMER_CD	TWNSHP	PRIMER
TIER_NO	TWNSHP	TOWN
TIER_FRAC	TWNSHP	TWNFRT
TIER_DIR_CD	TWNSHP	TWNDIR
RANGE_NO	TWNSHP	RANGE
RANGE_FRAC	TWNSHP	RNGFRT
RANGE_DIR_CD	TWNSHP	RNGDIR
TOWNSHIP_DUP_CD	TWNSHP	TWNDUP
SECTION	FIRST	SECTN
SEC_FRAC	FIRST	SECFRT
SEC_DUP	FIRST	SECDUP
REDEFINED ITEM		
TOWNSHIP	N/A	N/A

SUBCLASS LADESC (gcdb.patladesc)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
LADESC#	N/A	N/A
LADESC-ID	N/A	N/A
SEC_NO	FIRST	SECTN
SEC_FRAC	FIRST	SECFRT
SEC_DUP	FIRST	SECDUP
NOMINAL_LOCATION	N/A	N/A
MINOR_SUB	N/A	N/A
SURVEY_TYPE	SURDES	SURSYS
SURVEY_NUMBER	SURDES	SURNUM1
SURVEY_SUFFIX	SURDES	SURNUM2
SURVEY_NOTE	N/A	N/A
ACREAGE	PARARA	PARA
ACRE_SRC_CD	PARARA	PARSEC
DUP_DESC_CD	LADESC	DESCDUP
DISCREPANCY_CD	LADESC	DISCCD
EXCEPTION_CD	N/A	N/A
STATE_CD	TWNSHP	STATE
PRINMER_CD	TWNSHP	PRIMER
TIER_NO	TWNSHP	TOWN
TIER_FRAC	TWNSHP	TWNFRT
TIER_DIR_CD	TWNSHP	TWNDIR
RANGE_NO	TWNSHP	RANGE
RANGE_FRAC	TWNSHP	RNGFRT
RANGE_DIR_CD	TWNSHP	RNGDIR
TOWNSHIP_DUP_CD	TWNSHP	TWNDUP

SUBCLASS LADESC - *Continued*

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
LATITUDE	N/A	N/A
LONGITUDE	N/A	N/A
SUBSURF_ONLY	N/A	N/A
VALIDATION_CD	LADESC	VALIDCD

3.0.8 RELIABILITY ARC ATTRIBUTE (rel_lines_utm.aat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
FNODE#	N/A	N/A
TNODE#	N/A	N/A
LPOLY#	N/A	N/A
RPOLY#	N/A	N/A
LENGTH	N/A	N/A
REL_LINES_UTM#	N/A	N/A
REL_LINES_UTM-ID	N/A	N/A
FROM_ERROR_N	N/A	FYACC
FROM_ERROR_E	N/A	FXACC
TO_ERROR_N	N/A	TYACC
TO_ERROR_E	N/A	TXACC
REL_TYPE	N/A	N/A
HI_REL_VALUE	N/A	N/A
FROM_POINT_ID	N/A	N/A
TO_POINT_ID	N/A	N/A
TOWNSHIP	N/A	N/A

3.0.9 RELIABILITY AREAS POLYGON ATTRIBUTE (rel_areas_utm.pat)

COVERAGE ITEMS	FGDC TABLE	FGDC ITEM NAME
AREA	N/A	N/A
PERIMETER	N/A	N/A
REL_LINES_UTM#	N/A	N/A
REL_LINES_UTM-ID	N/A	N/A
FROM_ERROR_N	N/A	FYACC
FROM_ERROR_E	N/A	FXACC
TO_ERROR_N	N/A	TYACC
TO_ERROR_E	N/a	TXACC
HI_REL_VALUE	N/A	N/A
FROM_POINT_ID	N/A	N/A
TO_POINT_ID	N/A	N/A
TOWNSHIP	N/A	N/A

Appendix A: Import Utility for ArcInfo E00 Files

GCDB coverages are distributed in the ArcInfo E00 interchange format. In order to use the coverages in a GIS (ArcInfo or ArcView) the E00 files must be converted back to their native coverage format. Both ArcInfo and ArcView GIS have “import” utilities that support the translation of E00 formats. Common “import” functionality is described below. For complete documentation, please refer to the ArcInfo and/or ArcView GIS Help Files.

Importing into ArcInfo

The IMPORT command in ArcInfo is used to convert E00 files into coverage format. The command is available at the ARC: prompt. The following can be typed at the command prompt to create the GCDB coverage from the nm23t0060n0030e_gcdb.e00 file:

```
arc: import cover nm23t0060n0030e_gcdb.e00 GCDB
```

Importing into ArcView GIS

IMPORT71 is a stand-alone program that converts E00 files into a data source in a format that can be added to a project or viewed in ArcView GIS. ArcView GIS actually ships with two import utilities: IMPORT and IMPORT71. The IMPORT71 utility is recommended because it supports double precision and has no restrictions on the size of the data source.

IMPORT71 appears as a program item in the ArcView program group. To run IMPORT71, double-click the IMPORT71 program item in the ArcView program group. A dialog box is presented with prompts for exported filename and the output data source.

You can also run the program from the MS-DOS prompt, passing the parameters on the command line. The executable is located in the installation bin32 directory. The following example shows how to use IMPORT71 to convert the interchange file C:\nm23t0060n0030e_gcdb.e00 to the coverage C:\GCDB:

```
C:\ESRI\Av_gis30\Arcview\bin32> IMPORT71 C:\nm23t0060n0030e_gcdb.e00 C:\GCDB
```